

**Patent Claims:**

1. Method for individualizing a hearing aid in adaptation to the loudness perception of the individual, said method consisting of the following:
- Measurement and quantification by parameters of the loudness perception of the individual, weighted by a first factor;
  - Weighting of a normal loudness perception and its parameters by a second factor and use of the weighted loudness perception and its parameters for adjusting the hearing aid.
2. Method as in claim 1, whereby the compression and/or amplification is/are adjusted in the hearing aid, for which purpose the compression and, respectively, the amplification are each determined as a function of the frequency.
3. Method as in claim 2, whereby, for determining the compression, the loudness perception of the individual is quantified by means of a HVLS/LOHL factor which is determined by loudness scaling at a minimum of one frequency.
4. Method as in claim 3, characterized in that the HVLS/LOHL factor is modeled using the equation

$$\log_{10}(\alpha) = a_a \times HV/HL + b_a \times \log(HVHL) + VP_{\text{consta}}$$

where

09629700-010302

Sub  
A1

- $\alpha$  = gradient of the loudness function,
- HV/HL = hearing loss in dB,
- $a_a, b_a$  = constant function parameter, and
- $VP_{consta}$  = the individual function parameter which adapts the HVLS/LOHL factor to the data sampling points  $\alpha_1, \alpha_2, \alpha_3, \dots$ ,

and that  $VP_{consta}$  is determined on the basis of a loudness scaling performed at a minimum of one frequency and preferably at three different frequencies.

5. Method as in claim 2, whereby, for determining the amplification, the loudness perception of the individual is quantified by means of an HVLO/HLL0 factor which is defined by loudness scaling at a minimum of one frequency.
6. Method as in claim 5, characterized in that the HVLO/HLL0 factor is modeled using the equation

$$L_0 = a_L \times HV/HL + b_L \times \log(HV/HL) + VP_{constL},$$

where

- $L_0$  = level of loudness=0,
- HV/HL = hearing loss in dB,
- $a_L, b_L$  = constant function parameter, and
- $VP_{constL}$  = individual function parameter which adapts the HVLO/HLL0 function to the data sampling points  $L_{01}, L_{02}, L_{03}, \dots$ ,

and that  $VP_{constL}$  is determined on the basis of a loudness scaling performed at a minimum of one frequency and preferably at three different frequencies.

09829700-010302

Sub  
AL

- Sub A1
7. Method as in one or several of the claims 3 to 6, whereby the hearing loss is used for determining the frequencies at which loudness scaling is performed.
  8. Method as in one or several of the preceding claims, characterized in that the value of the weighted factors depends on the assumed and/or determined accuracy of the loudness scaling data.
  9. Method as in claim 8, characterized by the selection of a value of  $2/3$  for the first factor and of a value of  $1/3$  for the second factor.

20250710 00262850